

**\*09866582\***

1600

**RAW SEQUENCE LISTING**  
PATENT APPLICATION: US/09/866,582A

DATE: 12/27/2002  
TIME: 14:17:42

Input Set : A:\07917-145001.txt  
Output Set: N:\CRF4\12272002\I866582A.raw

4 <110> APPLICANT: Witman, George B.  
5 . Pazour, Gregory J.  
6 Rosenbaum, Joel L.  
7 Cole, Douglas G.  
9 <120> TITLE OF INVENTION: INTRAFLAGELLAR TRANSPORT  
11 <130> FILE REFERENCE: 07917-145001  
13 <140> CURRENT APPLICATION NUMBER: US 09/866,582A  
14 <141> CURRENT FILING DATE: 2001-05-24  
16 <150> PRIOR APPLICATION NUMBER: US 60/206,923  
17 <151> PRIOR FILING DATE: 2000-05-24  
19 <160> NUMBER OF SEQ ID NOS: 50  
21 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
23 <210> SEQ ID NO: 1  
24 <211> LENGTH: 877  
25 <212> TYPE: DNA  
26 <213> ORGANISM: Chlamydomonas reinhardtii  
28 <220> FEATURE:  
29 <221> NAME/KEY: CDS  
30 <222> LOCATION: (114)...(518)  
32 <400> SEQUENCE: 1  
33 caccgctgcc gctgaacaga aagtctgcgc agactcgctc tcttgccaaag ttcttgccaa 60  
34 aaccagcagg cctagagggtt gccttaacct aaatatacaa aacacagagc atc atg 116  
35 Met  
36 1  
38 gac gcg gta gat aga gga gtc tac ttt gac gag gac ttt cat gtc cgc 164  
39 Asp Ala Val Asp Arg Gly Val Tyr Phe Asp Glu Asp Phe His Val Arg  
40 5 10 15  
42 att ctt gat gtt gac aag tac aat gct tca aag tcg ctc cag gag aac 212  
43 Ile Leu Asp Val Asp Lys Tyr Asn Ala Ser Lys Ser Leu Gln Asp Asn  
44 20 25 30  
46 aca aat gtg ttc att aac aac atc caa aat atg caa ggc ctc gtg gag 260  
47 Thr Asn Val Phe Ile Asn Asn Ile Gln Asn Met Gln Gly Leu Val Asp  
48 35 40 45  
50 aag tac gtg tcc gcc atc gac cag cag gtc gag cgg cta gaa gct gaa 308  
51 Lys Tyr Val Ser Ala Ile Asp Gln Gln Val Glu Arg Leu Glu Ala Glu  
52 50 55 60 65  
54 aag ctg aag gcc att ggc ctg cgg aac cgg gtg gct gcg ctg agc gag 356  
55 Lys. Leu Lys Ala Ile Gly Leu Arg Asn Arg Val Ala Ala Leu Ser Glu  
56 70 75 80  
58 gag cgg aaa cgt aaa caa aag gag cag gag cgc atg cta gcg gag aag 404  
59 Glu Arg Lys Arg Lys Gln Lys Glu Gln Glu Arg Met Leu Ala Glu Lys  
60 85 90 95  
62 cag gag gag ctt gag agg ctc caa atg gag gag cag tcg ctg atc aag 452

**RECEIVED**  
JAN 06 2003  
P.6  
**TECH CENTER 1600/2900**

**ENTERED**

**RAW SEQUENCE LISTING** DATE: 12/27/2002  
**PATENT APPLICATION: US/09/866,582A** TIME: 14:17:42

Input Set : A:\07917-145001.txt  
 Output Set: N:\CRF4\12272002\I866582A.raw

```

63 Gln Glu Glu Leu Glu Arg Leu Gln Met Glu Glu Gln Ser Leu Ile Lys
64      100          105          110
66 gtg aag ggc gag cag gag ctc atg att cag aag ctg tcg gac agc agc      500
67 Val Lys Gly Glu Gln Glu Leu Met Ile Gln Lys Leu Ser Asp Ser Ser
68      115          120          125
70 agc ggg gcg gca tac gtg taaacggtgt tcggacgtca tgcgtgcaaa      548
71 Ser Gly Ala Ala Tyr Val
72 130          135
74 ggtagttgc tctgtgaggg ttggctgagg cggcggaggg tgctattgag gctgcagcat      608
75 gccgtctggc ggcagatgtc cataacggta tgggggtttg ggcacagaac gaaacggcga      668
76 ggggtgcgaa atgtcgtgca gaagcgcacgc tacagcatcc atggtaatgtc gaggcttact      728
77 ggggtgtcagt gcgtcgatcc ccactggggc cacacttgca ggcaggagcg ccattgttg      788
78 gcccacggat tgcgtcaagg acttgaacgg cgccagtgaa ggcggggaaat ggaatgtaaa      848
79 caaacgactc gaaaaaaaaaaaaaaa      877
81 <210> SEQ ID NO: 2
82 <211> LENGTH: 135
83 <212> TYPE: PRT
84 <213> ORGANISM: Chlamydomonas reinhardtii
86 <400> SEQUENCE: 2
87 Met Asp Ala Val Asp Arg Gly Val Tyr Phe Asp Glu Asp Phe His Val
88 1          5          10          15
89 Arg Ile Leu Asp Val Asp Lys Tyr Asn Ala Ser Lys Ser Leu Gln Asp
90 20          25          30
91 Asn Thr Asn Val Phe Ile Asn Asn Ile Gln Asn Met Gln Gly Leu Val
92 35          40          45
93 Asp Lys Tyr Val Ser Ala Ile Asp Gln Gln Val Glu Arg Leu Glu Ala
94 50          55          60
95 Glu Lys Leu Lys Ala Ile Gly Leu Arg Asn Arg Val Ala Ala Leu Ser
96 65          70          75          80
97 Glu Glu Arg Lys Arg Lys Gln Lys Glu Gln Glu Arg Met Leu Ala Glu
98 85          90          95
99 Lys Gln Glu Glu Leu Glu Arg Leu Gln Met Glu Glu Gln Ser Leu Ile
100 100          105          110
101 Lys Val Lys Gly Glu Gln Glu Leu Met Ile Gln Lys Leu Ser Asp Ser
102 115          120          125
103 Ser Ser Gly Ala Ala Tyr Val
104 130          135
106 <210> SEQ ID NO: 3
107 <211> LENGTH: 615
108 <212> TYPE: DNA
109 <213> ORGANISM: Chlamydomonas reinhardtii
111 <220> FEATURE:
112 <221> NAME/KEY: CDS
113 <222> LOCATION: (1)...(612)
115 <400> SEQUENCE: 3
116 atg gtg aag aaa gaa gtg aag ccc atc gat atc acc gca acg cta aga      48
117 Met Val Lys Lys Glu Val Lys Pro Ile Asp Ile Thr Ala Thr Leu Arg
118 1          5          10          15
120 tgc aaa gta gca gta gtc ggc gaa gcg act gtc ggc aag agc gcg ctc      96
  
```

**RAW SEQUENCE LISTING**  
**PATENT APPLICATION: US/09/866,582A**

**DATE: 12/27/2002**  
**TIME: 14:17:42**

**Input Set : A:\07917-145001.txt**  
**Output Set: N:\CRF4\12272002\I866582A.raw**

121	Cys	Lys	Val	Ala	Val	Val	Gly	Glu	Ala	Thr	Val	Gly	Lys	Ser	Ala	Leu		
122					20				25				30					
124	atc	tct	atg	ttc	acg	agt	aaa	ggc	agc	aag	ttt	cta	aag	gac	tat	gcg	144	
125	Ile	Ser	Met	Phe	Thr	Ser	Lys	Gly	Ser	Lys	Phe	Leu	Lys	Asp	Tyr	Ala		
126						35			40				45					
128	atg	acg	agt	ggg	gtg	gag	gtg	gtg	gtg	gtc	gcc	ccg	gtg	acc	att	ccg	gac	192
129	Met	Thr	Ser	Gly	Val	Glu	Val	Val	Ala	Pro	Val	Thr	Ile	Pro	Asp			
130						50			55			60						
132	acg	acg	gtc	tcg	gtg	gag	ctc	ttt	ctg	ctg	gac	acg	gcg	ggg	agc	gac	240	
133	Thr	Thr	Val	Ser	Val	Glu	Leu	Phe	Leu	Leu	Asp	Thr	Ala	Gly	Ser	Asp		
134	65					70				75			80					
136	ctg	tac	aag	gag	cag	ata	tcg	cag	tac	tgg	aac	ggc	gta	tac	tac	gcc	288	
137	Leu	Tyr	Lys	Glu	Gln	Ile	Ser	Gln	Tyr	Trp	Asn	Gly	Val	Tyr	Tyr	Ala		
138						85				90			95					
140	att	ctc	gtg	ttc	gat	gtg	agc	tct	atg	gag	tcc	gag	tcg	tgc	aag		336	
141	Ile	Leu	Val	Phe	Asp	Val	Ser	Ser	Met	Glu	Ser	Phe	Glu	Ser	Cys	Lys		
142						100				105			110					
144	gcg	tgg	ttt	gag	ctg	ctc	aaa	tcg	gcg	cgt	ccc	gac	cg	gg	ccg		384	
145	Ala	Trp	Phe	Glu	Leu	Leu	Lys	Ser	Ala	Arg	Pro	Asp	Arg	Glu	Arg	Pro		
146						115				120			125					
148	ctg	cgc	gcc	gtg	ctg	gtg	g	g	a	a	g	ac	ctt	ccg	ccg	cag	cg	432
149	Leu	Arg	Ala	Val	Leu	Val	Ala	Asn	Lys	Thr	Asp	Leu	Pro	Pro	Gln	Arg		
150						130			135			140						
152	cac	cag	gtg	cg	ctg	gac	atg	g	cg	cag	gac	tgg	gcc	acc	acc	acc	acc	480
153	His	Gln	Val	Arg	Leu	Asp	Met	Ala	Gln	Asp	Trp	Ala	Thr	Thr	Asn	Thr		
154	145					150				155			160					
156	ctc	gac	ttc	ttc	gac	gtg	tcc	g	cg	a	cc	ccc	ggc	a	g	cg	gt	528
157	Leu	Asp	Phe	Phe	Asp	Val	Ser	Ala	Asn	Pro	Pro	Gly	Lys	Asp	Ala	Asp		
158						165				170			175					
160	g	cg	cc	ttc	ctg	tcc	atc	g	cc	acc	acc	ttc	tac	cg	aa	cc	gac	576
161	Ala	Pro	Phe	Leu	Ser	Ile	Ala	Thr	Thr	Phe	Tyr	Arg	Asn	Tyr	Glu	Asp		
162						180				185			190					
164	a	a	g	t	g	c	cc	t	c	g	c	t	c	a	c	t	615	
165	Lys	Val	Ala	Ala	Phe	Gln	Asp	Ala	Cys	Arg	Asn	Tyr						
166						195				200								
168	<210>	SEQ	ID	NO:	4													
169	<211>	LENGTH:	204															
170	<212>	TYPE:	PRT															
171	<213>	ORGANISM:	Chlamydomonas	reinhardtii														
173	<400>	SEQUENCE:	4															
174	Met	Val	Lys	Glu	Val	Lys	Pro	Ile	Asp	Ile	Thr	Ala	Thr	Leu	Arg			
175	1				5				10				15					
176	Cys	Lys	Val	Ala	Val	Val	Gly	Glu	Ala	Thr	Val	Gly	Lys	Ser	Ala	Leu		
177						20			25			30						
178	Ile	Ile	Ser	Met	Phe	Thr	Ser	Lys	Gly	Ser	Lys	Phe	Leu	Lys	Asp	Tyr	Ala	
179						35			40			45						
180	Met	Met	Thr	Ser	Gly	Val	Glu	Val	Val	Val	Ala	Pro	Val	Thr	Ile	Pro	Asp	
181						50			55			60						
182	Thr	Thr	Val	Ser	Val	Glu	Leu	Phe	Leu	Leu	Asp	Thr	Ala	Gly	Ser	Asp		

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/866,582A

DATE: 12/27/2002  
TIME: 14:17:42

Input Set : A:\07917-145001.txt  
Output Set: N:\CRF4\12272002\I866582A.raw

183	65	70	75	80													
184	Leu	Tyr	Lys	Glu	Gln	Ile	Ser	Gln	Tyr	Trp	Asn	Gly	Val	Tyr	Tyr	Ala	
185																95	
186	Ile	Leu	Val	Phe	Asp	Val	Ser	Ser	Met	Glu	Ser	Phe	Glu	Ser	Cys	Lys	
187																110	
188	Ala	Trp	Phe	Glu	Leu	Leu	Lys	Ser	Ala	Arg	Pro	Asp	Arg	Glu	Arg	Pro	
189																125	
190	Leu	Arg	Ala	Val	Leu	Val	Ala	Asn	Lys	Thr	Asp	Leu	Pro	Pro	Gln	Arg	
191																140	
192	His	Gln	Val	Arg	Leu	Asp	Met	Ala	Gln	Asp	Trp	Ala	Thr	Thr	Asn	Thr	
193	145															160	
194	Leu	Asp	Phe	Phe	Asp	Val	Ser	Ala	Asn	Pro	Pro	Gly	Lys	Asp	Ala	Asp	
195																175	
196	Ala	Pro	Phe	Leu	Ser	Ile	Ala	Thr	Thr	Phe	Tyr	Arg	Asn	Tyr	Glu	Asp	
197																190	
198	Lys	Val	Ala	Ala	Phe	Gln	Asp	Ala	Cys	Arg	Asn	Tyr					
199																200	
201	<210>	SEQ	ID	NO:	5												
202	<211>	LENGTH:	1035														
203	<212>	TYPE:	DNA														
204	<213>	ORGANISM:	Chlamydomonas	reinhardtii													
206	<220>	FEATURE:															
207	<221>	NAME/KEY:	CDS														
208	<222>	LOCATION:	(1)...(1032)														
210	<400>	SEQUENCE:	5														
211	atg	gat	gac	tct	atg	gac	tac	cct	gac	cgc	gac	ggg	gac	gac	ctg	gac	48
212	Met	Asp	Asp	Ser	Met	Asp	Tyr	Pro	Asp	Arg	Asp	Gly	Asp	Asp	Leu	Asp	
213	1				5				10						15		
215	cag	ttc	cag	ggc	acc	gcg	cgc	tcg	cag	gtc	gtg	cag	aac	cag	ccg	cac	96
216	Gln	Phe	Gln	Gly	Thr	Ala	Arg	Ser	Gln	Val	Val	Gln	Asn	Gln	Pro	His	
217																30	
219	gac	gag	gag	gtg	aat	ctg	agt	gag	tcg	gag	agc	ttc	gcg	gga	gcg	aat	144
220	Asp	Glu	Glu	Val	Asn	Leu	Ser	Glu	Ser	Glu	Ser	Phe	Ala	Gly	Ala	Asp	
221																45	
223	gag	cct	cca	gct	gct	gca	gat	gct	tcg	ctc	ata	gag	tca	cac	gac	192	
224	Glu	Pro	Pro	Ala	Ala	Pro	Arg	Asp	Ala	Ser	Leu	Ile	Glu	Ser	His	Asp	
225																60	
229	atg	gac	gag	ggg	cca	gct	gct	cca	gct	ccg	aca	ctc	tca	cca	acg	ggc	240
230	Met	Asp	Glu	Gly	Pro	Ala	Ala	Pro	Ala	Arg	Thr	Leu	Ser	Pro	Thr	Gly	
231	65															80	
233	tat	gag	gct	gga	aag	cac	gca	cct	ggc	ggc	atc	gcc	aac	tcg	gac	gag	288
234	Tyr	Glu	Ala	Gly	Lys	His	Ala	Pro	Gly	Gly	Ile	Ala	Asn	Ser	Asp	Glu	
235																95	
237	gca	ccg	ccg	ggg	ggt	gct	tac	aac	gca	cag	gag	tac	aag	cac	ctg	aat	336
238	Ala	Pro	Pro	Gly	Ala	Tyr	Asn	Ala	Gln	Glu	Tyr	Lys	His	Leu	Asn	Val	
239																110	
241	ggc	gag	gac	gtg	cgc	gag	ctg	ttc	tcc	tac	atc	ggc	ccg	tac	aag	ccg	384
242	Gly	Glu	Asp	Val	Arg	Glu	Leu	Phe	Ser	Tyr	Ile	Gly	Arg	Tyr	Lys	Pro	
243																125	

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/866,582A

DATE: 12/27/2002  
TIME: 14:17:42

Input Set : A:\07917-145001.txt  
Output Set: N:\CRF4\12272002\I866582A.raw

245	cag	acg	gtg	gag	ctg	gac	acg	cg	atc	aag	ccc	ttc	atc	cct	gac	tac	432
246	Gln	Thr	Val	Glu	Leu	Asp	Thr	Arg	Ile	Lys	Pro	Phe	Ile	Pro	Asp	Tyr	
247	130						135						140				
249	atc	ccc	g	c	g	t	g	g	g	atc	g	a	g	t	g	c	480
250	Ile	Pro	Ala	Val	Gly	Gly	Ile	Asp	Glu	Phe	Ile	Lys	Val	Pro	Arg	Pro	
251	145						150				155		160				
253	gac	acc	a	a	g	cc	g	a	c	t	ct	g	g	a	g	cc	528
254	Asp	Thr	Lys	Pro	Asp	Tyr	Leu	Gly	Leu	Lys	Val	Leu	Asp	Glu	Pro	Ala	
255							165			170		175					
257	gcc	a	a	g	c	t	g	a	c	g	ct	c	g	c	g	ct	576
258	Ala	Lys	Gln	Ser	Asp	Pro	Thr	Val	Leu	Thr	Leu	Gln	Leu	Arg	Gln	Leu	
259							180			185		190					
261	tcc	a	a	g	g	g	cc	g	cc	a	g	cc	g	at	g	tt	624
262	Ser	Lys	Glu	Ala	Pro	Gly	Ala	Lys	Ala	Asp	Met	Val	Gly	Arg	Leu	Glu	
263							195			200		205					
265	cac	acc	g	a	c	g	a	a	g	at	c	a	g	t	g	cc	672
266	His	Thr	Asp	Glu	Asn	Lys	Ala	Lys	Lys	Ile	Gln	Gln	Trp	Ile	Ala	Ser	
267							210			215		220					
269	atc	aa	g	a	c	atc	c	a	g	cc	720						
270	Ile	Asn	Asp	Ile	His	Lys	Ala	Lys	Pro	Ala	Ala	Thr	Val	Asn	Tyr	Ser	
271							225			230		235		240			
273	a	a	g	c	g	c	g	a	g	at	c	g	g	t	g	cc	768
274	Lys	Arg	Met	Pro	Glu	Ile	Glu	Ala	Leu	Met	Gln	Glu	Trp	Pro	Pro	Glu	
275							245			250		255					
277	gt	g	g	ac	cc	tc	a	a	c	at	cc	tc	gg	ca	tg	g	816
278	Val	Glu	Thr	Phe	Leu	Lys	Thr	Met	His	Met	Pro	Ser	Gly	Asp	Val	Glu	
279							260			265		270					
281	ct	g	a	c	atc	cc	864										
282	Leu	Asp	Ile	Lys	Thr	Tyr	Ala	Arg	Leu	Val	Cys	Thr	Leu	Leu	Asp	Ile	
283							275			280		285					
286	ccc	gt	tac	gac	gac	ccc	gt	g	ag	ag	ct	ca	gt	ct	tt	aca	912
287	Pro	Val	Tyr	Asp	Asp	Pro	Val	Glu	Ser	Leu	His	Val	Leu	Phe	Thr	Leu	
288							290			295		300					
290	tac	ct	g	tt	a	a	a	c	c	cc	tt	gg	cc	at	tg	960	
291	Tyr	Leu	Glu	Phe	Lys	Asn	Asn	Pro	Ile	Phe	Arg	Gln	His	Met	Glu	Met	
292							305			310		315		320			
294	gag	a	a	g	ct	g	ac	g	tg	gg	gg	gg	gg	at	tg	gg	1008
295	Glu	Asn	Lys	Leu	Asp	Gly	Met	Ser	Gly	Gly	Gly	Gly	Gly	Met	Met	Gly	
296							325			330		335					
298	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	1035
299	Gly	Gly	Ala	Asp	Val	Leu	Gly	Leu									
300							340										
302	<210>	SEQ	ID	NO:	6												
303	<211>	LENGTH:	344														
304	<212>	TYPE:	PRT														
305	<213>	ORGANISM:	Chlamydomonas	reinhardtii													
307	<400>	SEQUENCE:	6														
308	Met	Asp	Asp	Ser	Met	Asp	Tyr	Pro	Asp	Arg	Asp	Gly	Asp	Asp	Leu	Asp	
309	1						5			10			15				

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/866,582A

DATE: 12/27/2002  
TIME: 14:17:43

Input Set : A:\07917-145001.txt  
Output Set: N:\CRF4\12272002\I866582A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:21; Xaa Pos. 698  
Seq#:22; Xaa Pos. 698  
Seq#:24; Xaa Pos. 24  
Seq#:25; Xaa Pos. 66